WILKINSON BARKER KNAUER LLP

2300 N STREET, NW
SUITE 700
WASHINGTON, DC 20037
TEL 202.783.4141
FAX 202.783.5851
WWW.WBKLAW.COM

March 14, 2011

VIA ECFS

Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Room TW-A325
Washington, D.C. 20554

Re: *WT Docket Nos. 10-153, 09-106 and 07-121*
Comsearch Ex Parte Presentation

Dear Ms. Dortch:

Pursuant to Section 1.1206(b)(2) of the Commission's rules, this letter serves as notification that on March 11, 2011, Christopher Hardy and Will Perkins of Comsearch and the undersigned met with the following representatives of the Wireless Telecommunications Bureau (WTB): Tom Peters, Chief Engineer, WTB; David Goldman, Policy Advisor, WTB; Blaise Scinto, Chief Broadband Division, WTB; John Schauble and (by telephone) Stephen Buenzow, Deputy Chiefs, Broadband Division, WTB; and Charles Oliver, Attorney, Broadband Division, WTB. Comsearch reiterated its strong opposition to the proposal to authorize auxiliary stations under Part 101 and discussed the materials presented in the attached hand-out. Among other things, the attachment rebuts the arguments and data provided in the ex parte presentation of Wireless Strategies Inc. dated December 8, 2010 (posted on ECFS December 9, 2010).

Please contact the undersigned if you have any questions.

Respectfully submitted,

/s/
Timothy J. Cooney

cc: Tom Peters
David Goldman
Blaise Scinto
John Schauble
Stephen Buenzow
Charles Oliver

Comsearch Presentation to the FCC on WT Docket No. 10-153

March 11, 2011

COMSEARCH
A CommScope Company

Summary of Comsearch WT Docket No. 10-153 Comments

NPRM

- Strongly opposed proposal for Auxiliary Stations
  - Proposal Would Allow and Encourage:
    - Use of minimally compliant antennas
    - Unreasonably high Equivalent Isotropically Radiated Power ("EIRP")
    - Time Division Duplex ("TDD") systems in bands with exclusively Frequency Division Duplex ("FDD") characteristics
  - Although secondary, auxiliary stations may involve interference that would require mitigation
- Supported allowing adaptive modulation systems to operate below §101.141(a)(3) payload limits but recommended path design limitations to forestall deployment of poor antennas

NOI

- Cautioned that any definition of "rural areas" where lower efficiency systems would be allowed should consider existing density of microwave deployments

Existing Part 101 Regime

- Point-to-point ("PTP") licensing under Part 101 gives users fair and equal access to spectrum on a first-come first-served basis
- Rules crafted to require licensees to minimize impact and preserve spectrum resource for re-use by others
  - Use minimum power/EIRP necessary
  - Use antennas meeting Category A (Category B in uncongested areas)
  - Minimum payload capacity (bps/Hz) requirements
- Potential for interference depends on many factors including
  - Transmitter EIRP
  - Automatic Transmitter Power Control (ATPC)
  - Antenna patterns
  - Antenna Heights
  - Discrimination angles
  - Polarization
  - Terrain and Clutter

COORDINATION CONTOUR AND SPECTRUM RE-USE

PTP Coordination Contour is not an Exclusion Zone

- Filings have implied PTP stations have difficulty sharing frequencies in coordination contour area (125 miles / 250 miles in keyhole)
- Coordination contour is nothing more than an area for an initial database cull to assemble list of links for detailed calculations
- Coordination contour is ***not an exclusion zone***
  - Many PTP links easily share frequencies inside the contour
  - No connection between size of contour and potential area for auxiliary stations

Coordination Contour - Example

•Coordination contours for the end points of a 47 mile link cover much of Southern California

PTP Coordination Contour Allows Numerous Microwave Links and Earth Stations to Coexist

- Composite contour intersects or contains 154 microwave links using the 6004.5/6256.54 MHz frequency pair and 102 licensed C-band earth stations

Comsearch Data, February 2011

COMSEARCH
A CommScope Company

AUXILIARY STATIONS PROPOSAL

Problems with Proposal for Auxiliary Stations

- In conflict with the PTP rules, applicants for primary licenses intended to support auxiliary stations would have incentive to:
  - Specify the highest power and minimally compliant antennas
    - Maximize coverage
    - Block other licensees as much as possible
  - License links for prospective multipoint base stations rather than point-to-point communication needs
  - Choose frequency configurations to enable time-division duplexing ("TDD") whereas the existing base of fixed operations exclusively uses frequency-division duplexing ("FDD")
    - Mixing TDD with FDD increases frequency coordination complexity

Problems with Proposal for Auxiliary Stations

- Secondary status for auxiliary stations would not resolve interference concerns
  - Although auxiliary stations would be secondary, preclusive effect of primary links using highest power and minimally compliant antennas may be excessive
  - Interference conflicts involving auxiliary stations will occur and the coordination process will have to arrange shutdown or modifications
    - Increased frequency coordination complexity
    - Increased costs for subsequent PTP users
- Serving multiple points from a base station using time-division multiple access ("TDMA") does not achieve re-use in the same sense as point-to-point licensing since the same channel resource is divided among the destination points

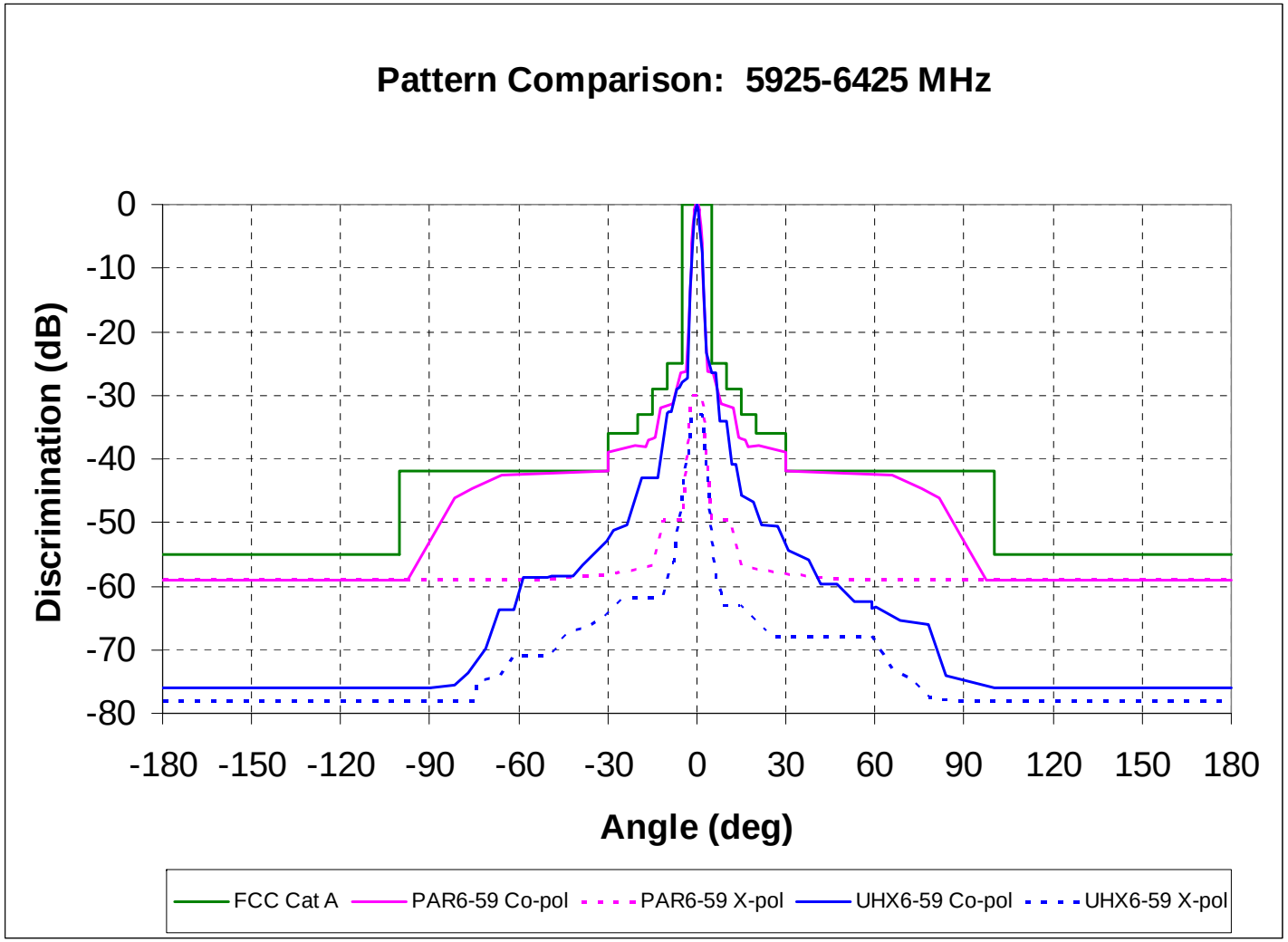
The FCC should recognize these problems and reject the NPRM proposal to authorize auxiliary stations.

Interference Area

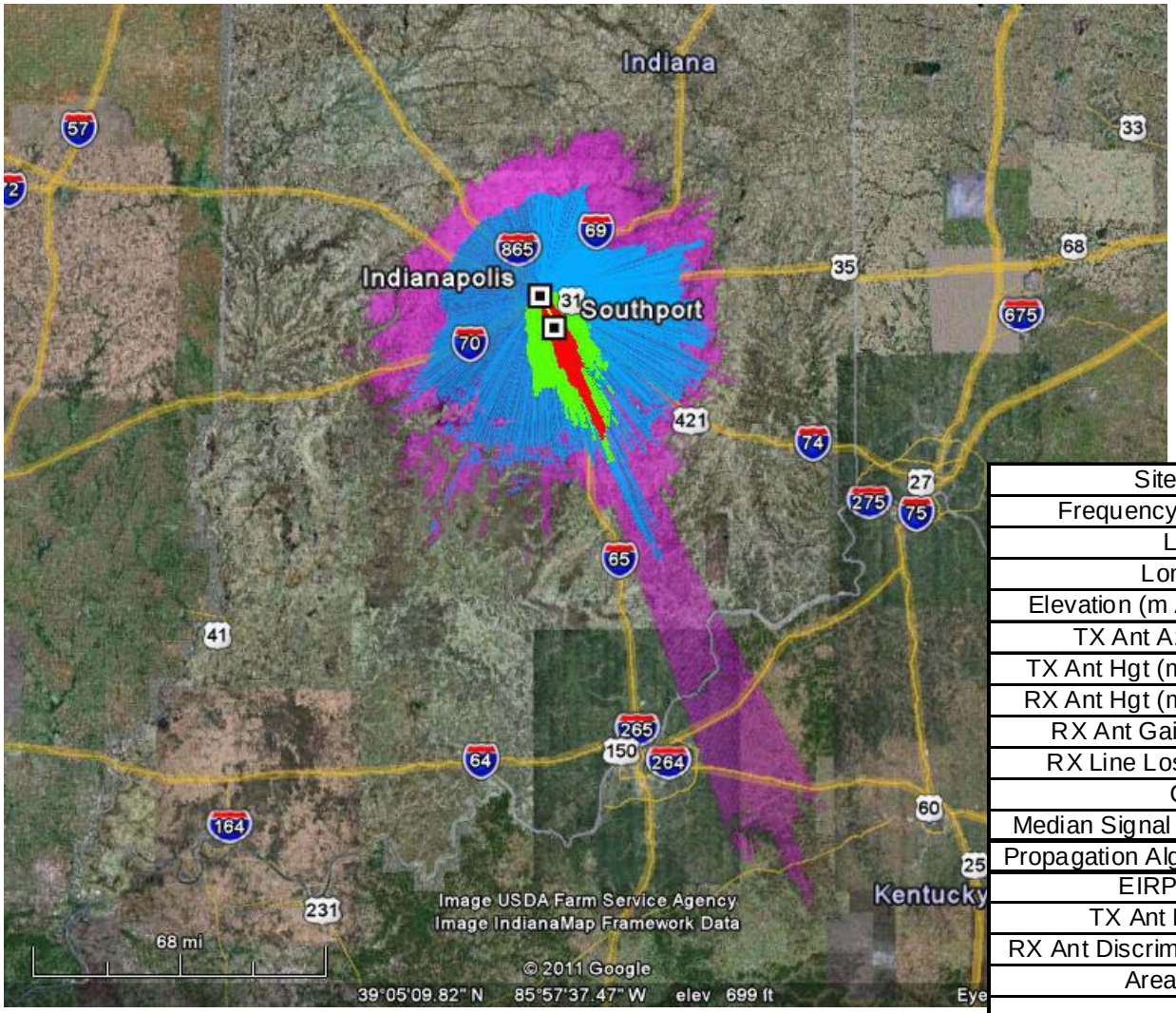
- The area where a transmitter can cause interference depends on a number of factors including:
  - EIRP (+ATPC)
  - Transmit Antenna Pattern
  - Antenna Heights
  - Polarization
  - Pattern and direction of potential “victim” antenna
  - Terrain and Clutter

Real PTP Antennas are Highly Directional and Superior to the Category A Minimum Requirements

- PAR6-59 and UHX6-59 antennas have at least 30 dB discrimination for angles greater than about 8 degrees
- PAR6-59 antenna has 59 dB discrimination for angles greater than 98 degrees (124 degree sector behind the antenna)
- PAR6-59 antenna has 30 dB and UHX6-59 antenna has 33 dB discrimination against cross-polarized signals for angles near boresight (zero degrees)



Effect of EIRP and Antenna Patterns on Interference Area



Site Name	Indianapolis				
Frequency (MHz)	6175.0				
Latitude	39-46-53.3 N				
Longitude	86-09-29.1 W				
Elevation (m AMSL)	218.0				
TX Ant Az (deg)	155.825				
TX Ant Hgt (m AGL)	48.8				
RX Ant Hgt (m AGL)	48.8				
RX Ant Gain (dBi)	38.2				
RX Line Loss (dB)	3.0				
Criteria	RX Signal (dBm)				
Median Signal Range	signal > -103.0				
Propagation Algorithm	NSMA				
EIRP (dBm)	85.0	65.0	53.2	65.0	53.2
TX Ant Pattern	Cat A	PAR6-59	UHX6-59	UHX6-59	PAR6-59
RX Ant Discrimination	0	0	0	30	59
Area (mi^2)	6084.0	2633.4	397.3	109.7	1.3
Color					

COMSEARCH
A CommScope Company

Interference Area is Governed By EIRP, Transmit Antenna, and Receive Antenna Parameters

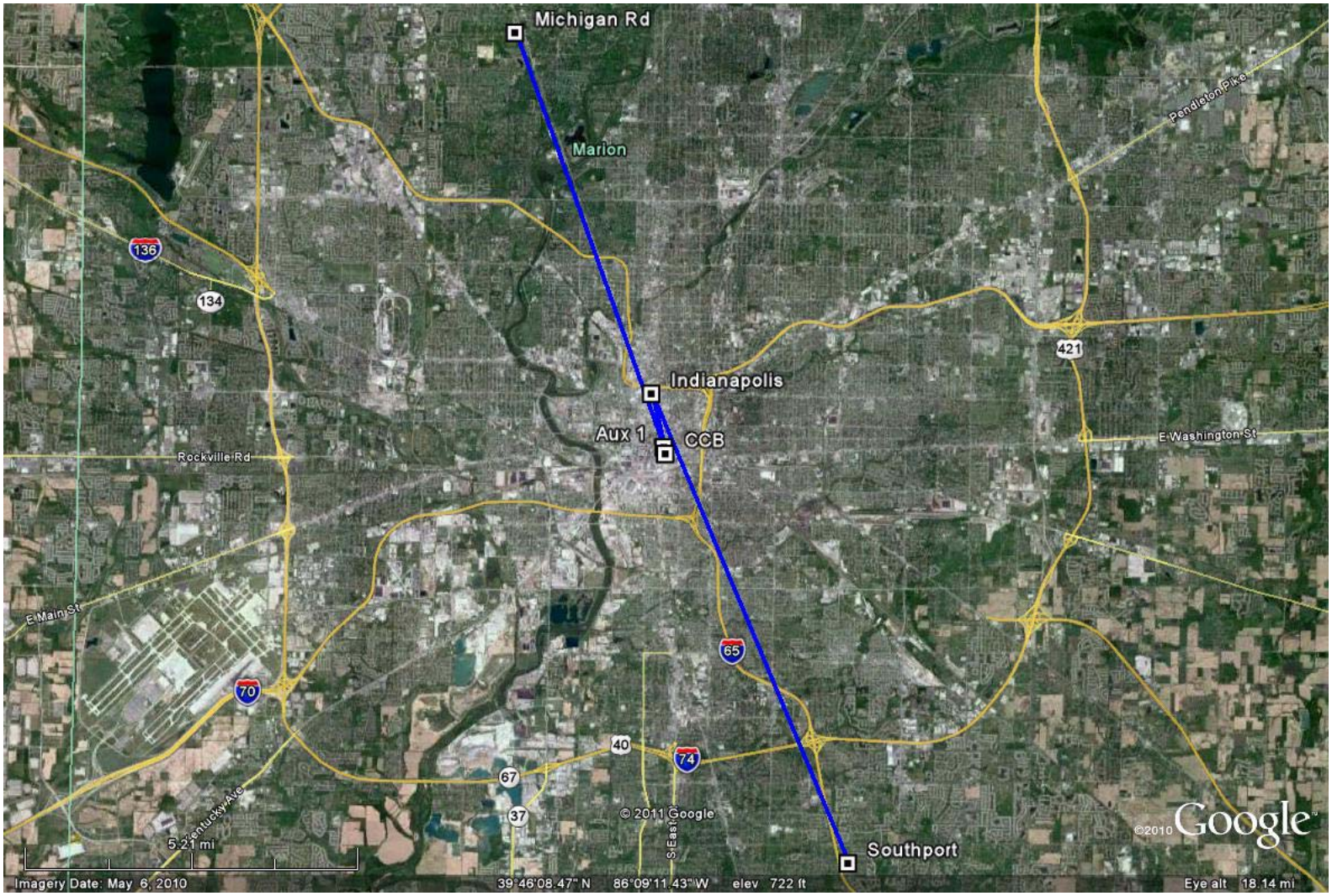
- Using excessive power and minimally compliant antennas significantly increases area of potential interference versus using “minimum amount of power necessary” and real Category A or ultra-high performance antennas
- In addition to transmitter power and transmit antenna pattern, interference area is also strongly dependent on receiving “victim” antenna alignment and polarization
- To the extent these factors are optimized under the letter and spirit of PTP licensing, other links may be located near and within area planned for auxiliary stations
- Since antennas of other users’ primary links may be intermingled with auxiliary stations:
  - Significant possibility of interference involving auxiliary stations can occur even when primary link is cleared
  - Unintentional or intentional sidelobe radiation does not create a natural operation zone for auxiliary stations
- Antennas meeting minimum Category A requirements do not have state-of-the-art performance
  - FCC should not permit coordinating and licensing Category A breakpoints rather than real pattern

Primary Links Will Be Able to Share Frequencies While Interfering With Auxiliary Stations

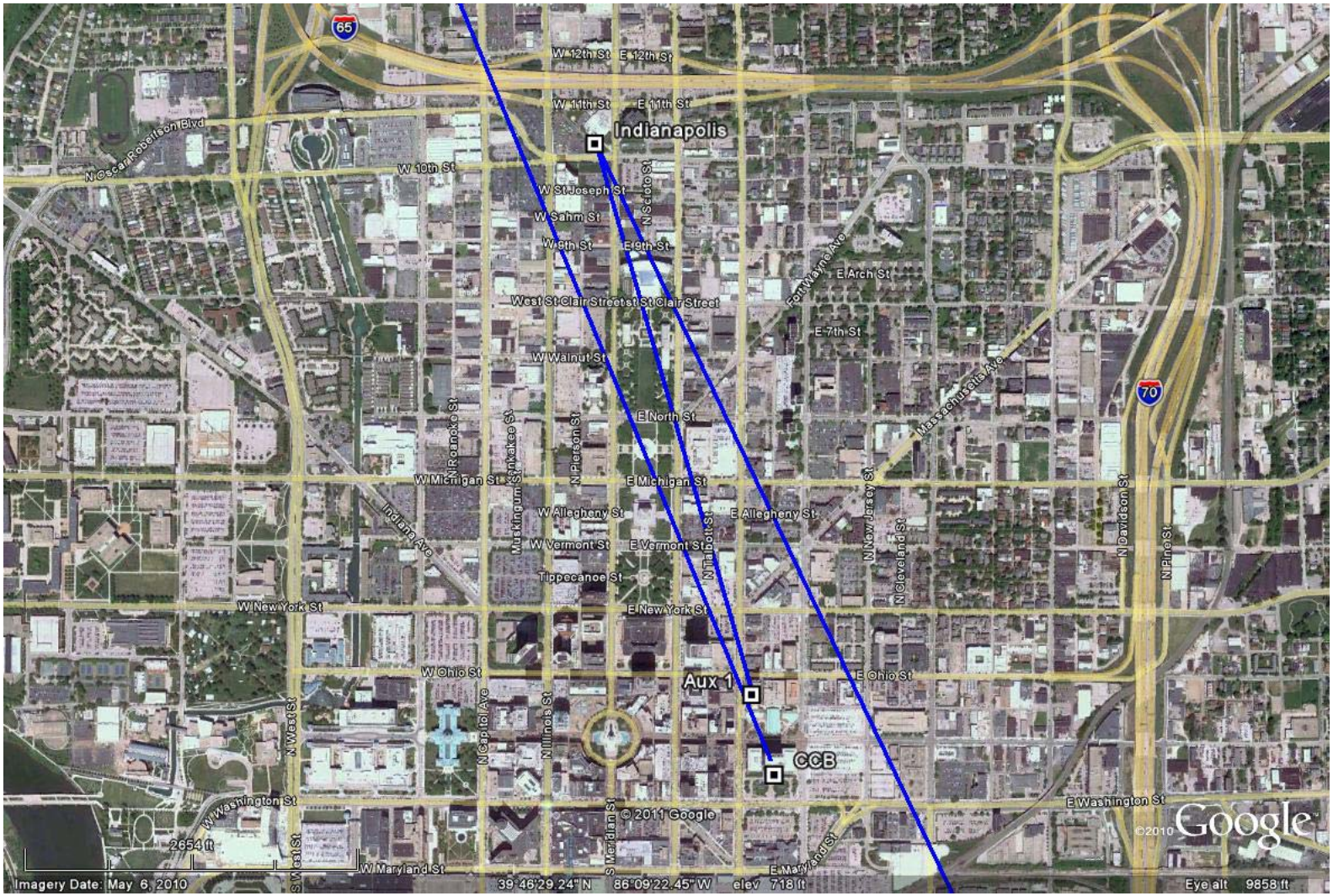
The following slides illustrate possible coordination and licensing activity:

- Company 1 licenses Indianapolis to Southport 6 GHz link using FDD
- Company 1 adds service from Indianapolis to auxiliary station Aux 1 using FDD/TDMA
- Company 2 licenses City and County Building (“CCB”) to Michigan Rd link using FDD
- CCB to Michigan Rd successfully coordinates with Indianapolis to Southport but has significant interference predicted with the Aux 1 link

Link Geometry



Link Geometry - Detail



Indianapolis – Southport Data Sheet

Administrative Information	**INDIANAPOLIS IN**			**SOUTHPORT IN**		
Licensee Name	Company 1			Company 1		
Site Information						
Latitude (NAD 83)	39 ° 46' 53.3" N			39 ° 40' 34.7" N		
Longitude (NAD 83)	86 ° 9' 29.1" W			86 ° 5' 49.2" W		
Ground Elevation (m/ft-AMSL)	218.10 / 715.6			249.70 / 819.2		
Path Azimuth (°)	155.825			335.864		
Path Length (km / miles)	12.797 / 7.952					
Transmit Antenna	52472A			52472A		
Manufacturer	ANDREW CORPORATION			ANDREW CORPORATION		
Model	PAR6-59B			PAR6-59B		
Gain(dBi) / Beamwidth(°) / Tilt(°)	38.2 / 1.90 / 0.10			38.2 / 1.90 / -0.18		
Centerline (m / ft - AGL)	48.77 / 160.0			48.77 / 160.0		
Radio Information						
Emission Designator / Modulation	30M0D7W	128 TCM		30M0D7W	128 TCM	
Loading	2016CH DIG 172560.000			2016CH DIG 172560.000		
Stability (%)	0.0003			0.0003		
	Nominal	Coordinated	Maximum	Nominal	Coordinated	Maximum
Power (dBm)		18.0			18.0	
Received Level (dBm)		-42.0			-42.0	
EIRP (dBm)		53.2			53.2	
Fixed Loss: Tx / Common (dB)	0.0 / 3.0			0.0 / 3.0		
Free Space Loss (dB)	130.4					
Transmit Frequencies (MHz)	6004.5000V(13T)			6256.5400V(23T)		

Indianapolis – Aux 1 Data Sheet

Administrative Information	**INDIANAPOLIS IN**			**AUX 1 IN**		
Licensee Name	Company 1			Company 1		
Site Information						
Latitude (NAD 83)	39 ° 46' 53.3" N			39 ° 46' 9.9" N		
Longitude (NAD 83)	86 ° 9' 29.1" W			86 ° 9' 14.4" W		
Ground Elevation (m/ft-AMSL)	218.10 / 715.6			217.50 / 713.6		
Path Azimuth (°)	165.352			345.354		
Path Length (km / miles)	1.383 / 0.860					
Transmit Antenna	52472A			42892A		
Manufacturer	ANDREW CORPORATION			ANDREW CORPORATION		
Model	PAR6-59B at 9.5 degrees			P2-57W RF		
Gain(dBi) / Beamwidth(°) / Tilt(°)	6.7			29.3 / 5.80 / -1.44		
Centerline (m / ft - AGL)	48.77 / 160.0			84.12 / 276.0		
Radio Information						
Emission Designator / Modulation	30M0D7W	128 TCM		30M0D7W	128 TCM	
Loading	2016CH DIG 172560.000			2016CH DIG 172560.000		
Stability (%)	0.0003			0.0003		
	Nominal	Coordinated	Maximum	Nominal	Coordinated	Maximum
Power (dBm)		18.0			18.0	
Received Level (dBm)		-63.1			-63.1	
EIRP (dBm)		21.7			44.3	
Fixed Loss: Tx / Common (dB)	0.0 / 3.0			0.0 / 3.0		
Free Space Loss (dB)	111.1					
Transmit Frequencies (MHz)	6004.5000V(13T)			6256.5400V(23T)		

CCB – Michigan Rd Data Sheet

Administrative Information	**CCB IN**		**MICHIGAN RD IN**
Licensee Name	Company 2		Company 2
Site Information			
Latitude (NAD 83)	39 ° 46' 4.6" N		39 ° 51' 43.3" N
Longitude (NAD 83)	86 ° 9' 12.7" W		86 ° 12' 2.2" W
Ground Elevation (m/ft-AMSL)	217.20 / 712.6		236.10 / 774.6
Path Azimuth (°)	338.912		158.882
Path Length (km / miles)		11.197 / 6.958	
Transmit Antenna	52472A		52472A
Manufacturer	ANDREW CORPORATION		ANDREW CORPORATION
Model	PAR6-59B		PAR6-59B
Gain(dBi) / Beamwidth(°) / Tilt(°)	38.2 / 1.90 / -0.24		38.2 / 1.90 / 0.16
Centerline (m / ft - AGL)	103.63 / 340.0		45.72 / 150.0
Radio Information			
Emission Designator / Modulation	30M0D7W	128 TCM	30M0D7W 128 TCM
Loading	2016CH DIG 172560.000		2016CH DIG 172560.000
Stability (%)	0.0003		0.0003
	Nominal Coordinated Maximum		Nominal Coordinated Maximum
Power (dBm)		16.0	16.0
Received Level (dBm)		-42.9	-42.9
EIRP (dBm)		51.2	51.2
Fixed Loss: Tx / Common (dB)	0.0 / 3.0		0.0 / 3.0
Free Space Loss (dB)		129.3	
Transmit Frequencies (MHz)	6004.5000H(13T)		6256.5400H(23T)

Indianapolis – Southport Requires Only 53.2 dBm EIRP For 99.999% Availability

	INDIANAPOLIS	SOUTHPORT
Elevation (m)	218.00	249.85
Latitude	39 46 53.30 N	39 40 34.71 N
Longitude	086 09 29.10 W	086 05 49.20 W
True azimuth (°)	155.82	335.86
Vertical angle (°)	0.10	-0.19
Antenna model	PAR6-59B	PAR6-59B
Antenna height (m)	48.80	48.80
Antenna gain (dBi)	38.20	38.20
TX line loss (dB)	3.00	3.00
Frequency (MHz)	6175.00	
Polarization	Vertical	
Path length (km)	12.80	
Free space loss (dB)	130.42	
Atmospheric absorption loss (dB)	0.11	
Net path loss (dB)	60.13	60.13
Radio model	128 TCM	128 TCM
TX power (watts)	0.06	0.06
TX power (dBm)	18.00	18.00
EIRP (dBm)	53.20	53.20
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER = 10^-6	BER = 10^-6
RX threshold level (dBm)	-72.00	-72.00
RX signal (dBm)	-42.13	-42.13
Thermal fade margin (dB)	29.87	29.87
Number of exposures	1	1
Interference fade margin - multipath (dB)	36.00	38.20
Flat fade margin - multipath (dB)	28.92	29.27
Dispersive fade margin (dB)	48.00	48.00
Dispersive fade occurrence factor	1.00	
Effective fade margin (dB)	28.87	29.21
Climatic factor	1.00	
Terrain roughness (m)	9.44	
C factor	1.86	
Fade occurrence factor (Po)	1.45E-02	
Average annual temperature (°C)	12.78	
Worst month - multipath (%)	99.99812	99.99827
(sec)	49.34	45.55
Annual - multipath (%)	99.99948	99.99952
(sec)	162.83	150.31
(% - sec)	99.99901 - 313.14	
Reliability Method - Vigants - Barnett		

COMSEARCH
A CommScope Company

CCB – Michigan Rd Availability Calculation

	CCB	Michigan Rd
Elevation (m)	217.00	236.00
Latitude	39 46 04.60 N	39 51 43.30 N
Longitude	086 09 12.70 W	086 12 02.20 W
True azimuth (°)	338.91	158.88
Vertical angle (°)	-0.24	0.16
Antenna model	PAR6-59B	PAR6-59B
Antenna height (m)	103.63	45.70
Antenna gain (dBi)	38.20	38.20
TX line loss (dB)	3.00	3.00
Frequency (MHz)	6175.00	
Polarization	Horizontal	
Path length (km)	11.20	
Free space loss (dB)	129.26	
Atmospheric absorption loss (dB)	0.10	
Net path loss (dB)	58.96	58.96
Radio model	128 TCM	128 TCM
TX power (watts)	0.04	0.04
TX power (dBm)	16.00	16.00
EIRP (dBm)	51.20	51.20
Emission designator	30M0D7W	30M0D7W
RX threshold criteria	BER = 10^-6	BER = 10^-6
RX threshold level (dBm)	-72.00	-72.00
RX signal (dBm)	-42.96	-42.96
Thermal fade margin (dB)	29.04	29.04
Number of exposures	1	1
Interference fade margin - multipath (dB)	35.30	33.10
Flat fade margin - multipath (dB)	28.12	27.60
Dispersive fade margin (dB)	48.00	48.00
Dispersive fade occurrence factor	1.00	
Effective fade margin (dB)	28.07	27.56
Climatic factor	1.00	
Terrain roughness (m)	7.86	
C factor	2.36	
Fade occurrence factor (Po)	1.23E-02	
Average annual temperature (°C)	12.78	
Worst month - multipath (%)	99.99809	99.99785
(sec)	50.31	56.60
Annual - multipath (%)	99.99947	99.99941
(sec)	166.03	186.78
(% - sec)	99.99888 - 352.81	
Reliability Method - Vigants - Barnett		

COMSEARCH
A CommScope Company

Calculations Predict Interference With Auxiliary Station but Not With Primary Link

Interference Calculations

Frequency	Transmitting Station	Transmitting Station EIRP (dBm)	Transmitting to	Victim Station	Victim Station Receiving From	Interference Path Distance (km)	Interference Level (dBm)	Interference Objective (dBm)	Margin (dB)	Result
6004.50	Indianapolis	53.2	Southport	Michigan Rd	CCB	9.66	-101.0	-103.0	-2.0	Acceptable
6256.54	Southport	53.2	Indianapolis	CCB	Michigan Rd	11.27	-103.2	-103.0	0.2	Clear
6004.50	CCB	51.2	Michigan Rd	Southport	Indianapolis	11.27	-105.2	-103.0	2.2	Clear
6256.54	Michigan Rd	51.2	CCB	Indianapolis	Southport	9.66	-103.0	-103.0	0.0	Clear
6004.50	CCB	51.2	Michigan Rd	Aux 1	Indianapolis	0.17	-90.2	-103.0	-12.8	Harmful
6256.54	Aux 1	44.3	Indianapolis	CCB	Michigan Rd	0.17	-88.3	-103.0	-14.7	Harmful

In response to the Example Presented in the Wireless Strategies, Inc. Ex Parte presentation of December 8, 2010

- The EIRP necessary for reliable operation on the Indianapolis to Southport path is far lower than the 68 dBm suggested by WSI

- If Indianapolis - Southport uses the “minimum amount of power necessary” and real PAR6-59 antennas, then:
  - other primary licensed microwave paths can use the same frequency pair in close proximity
  - the area where a usable signal is available for auxiliary stations appears quite limited

Auxiliary Stations Would Be Involved in Interference Conflicts

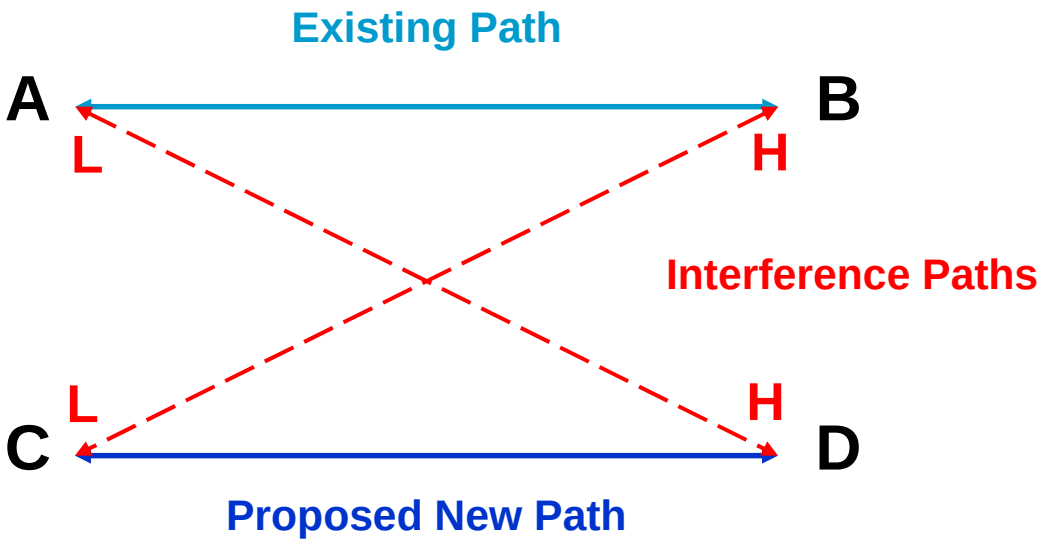
- Wireless Strategies Inc.'s claim that auxiliary stations will not block any new paths is only a literal restatement of the proposed rule language that imposes secondary status

- Auxiliary stations will often have to shut down or adjust operating parameters in response to subsequent coordination requests
  - Part 101 coordination process untested in demanding shutdown of operating facilities
  - New user likely to be drawn into unwelcome negotiation to resolve predicted conflicts with secondary auxiliary links
  - FCC precedents on secondary status vary on what showing is needed before secondary operation must shut down for claimed interference to primary licensee

Proposed Coexistence of TDD and FDD Raises Significant Coordination/Interference Issues

- FDD tries to follow matched high/low frequency plan
  - Co-located transmitters and receivers are not co-channel
- In TDD each station both transmits and receives on the channel(s)
  - Co-located systems may require joint timing of transmit and receive time slots to avoid interference
- Locations shared by FDD and TDD systems unavoidably involve potential interference among co-located transmitters and receivers
- Co-site interference difficult to predict and mitigate
  - Near zero interference path distance
  - Antennas in near field
  - Calculations sensitive to coordinate errors and rounding

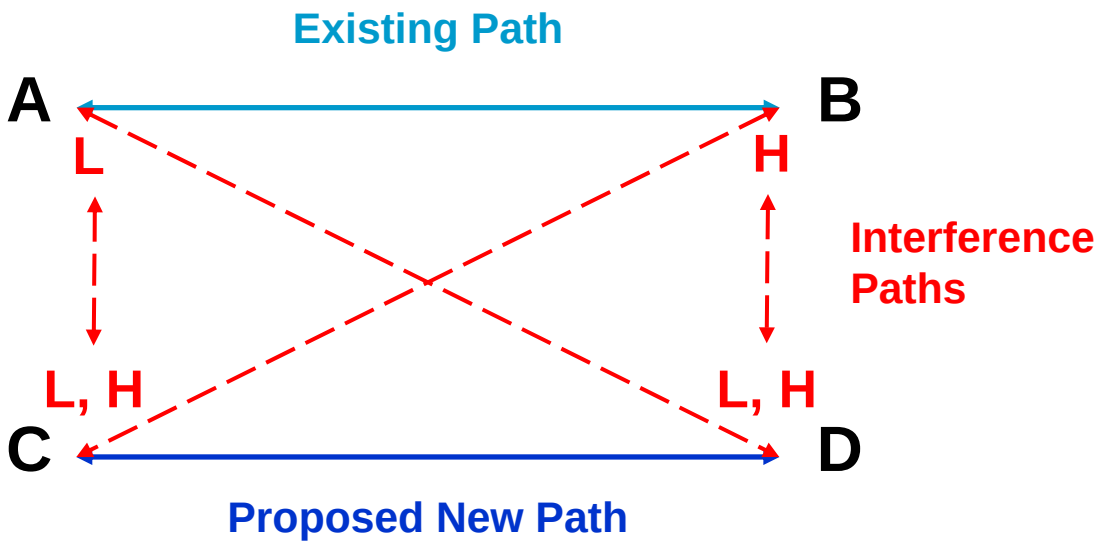
FDD Interference Scenarios



Interference Scenarios

A → D
D → A
B → C
C → B

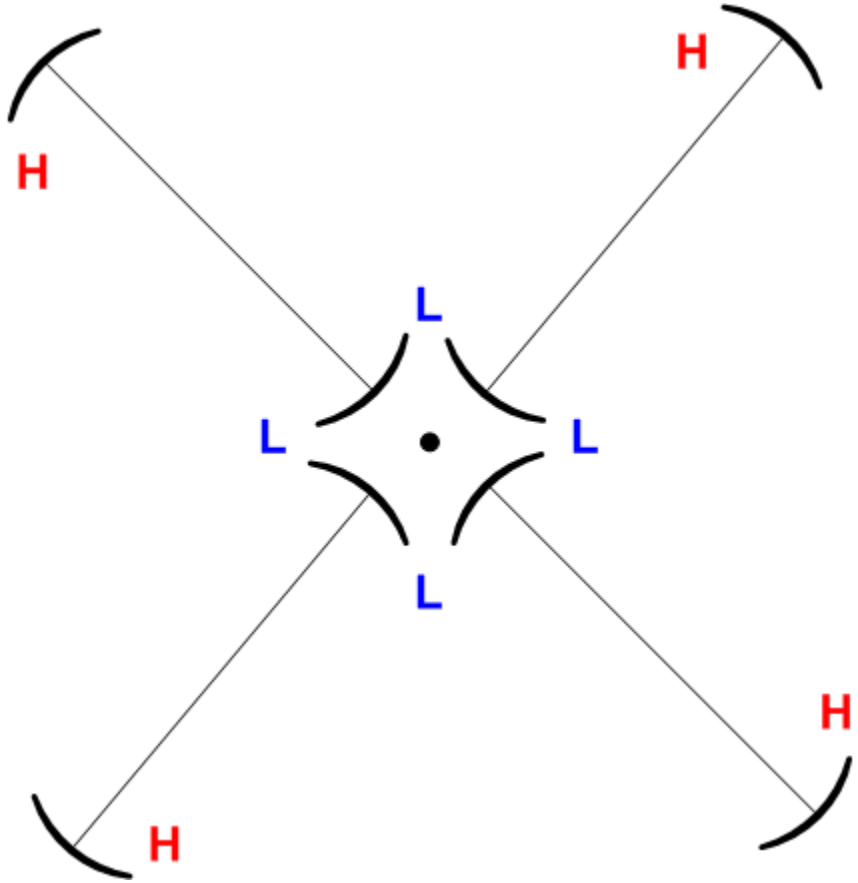
Combined FDD/TDD Operations Require Twice as Many Interference Scenarios to be Cleared Before Operation



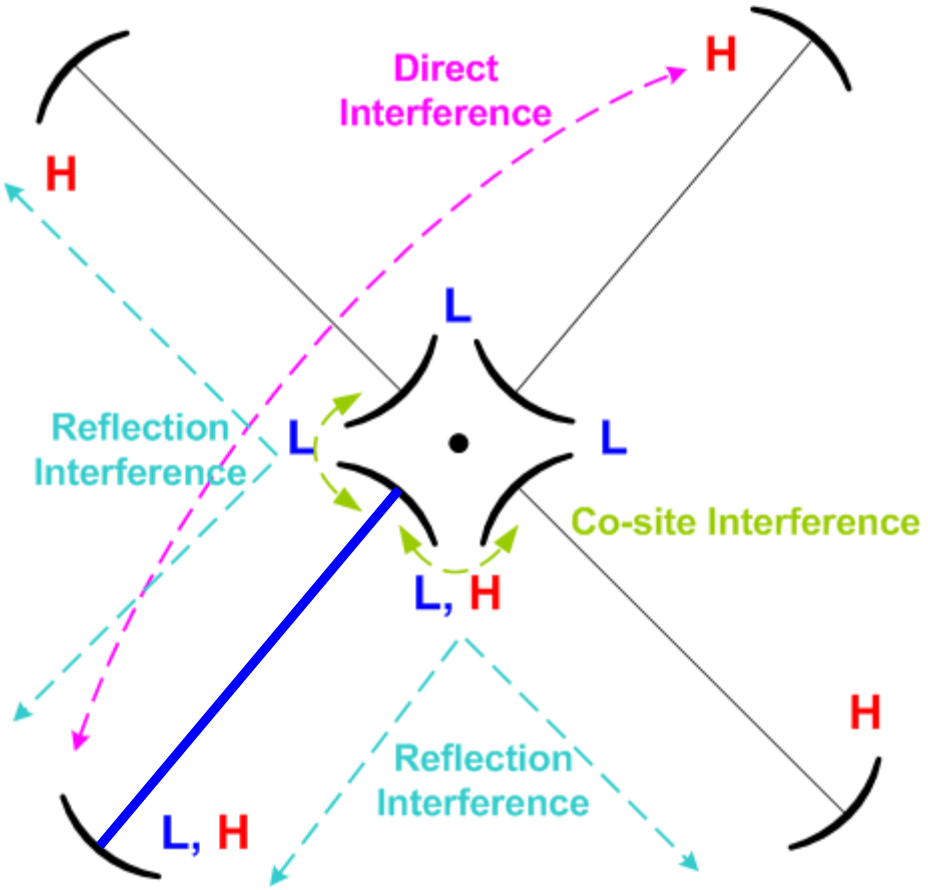
Interference Scenarios

A → D
D → A
B → C
C → B
A → C
C → A
B → D
D → B

Industry Recommended FDD Matched High/Low Plan



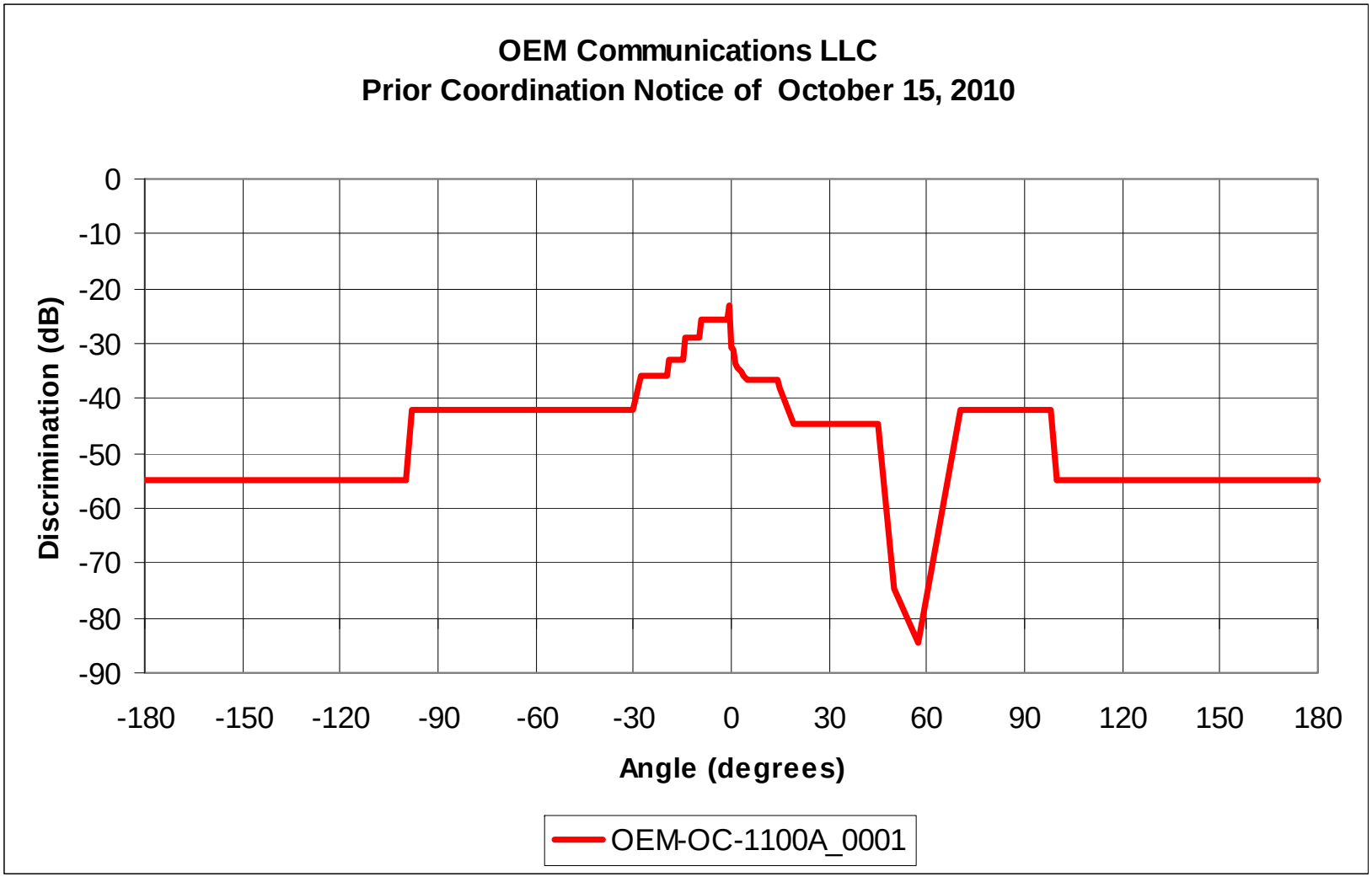
Sharing Sites Among FDD and TDD Systems Causes Additional Interference Concerns



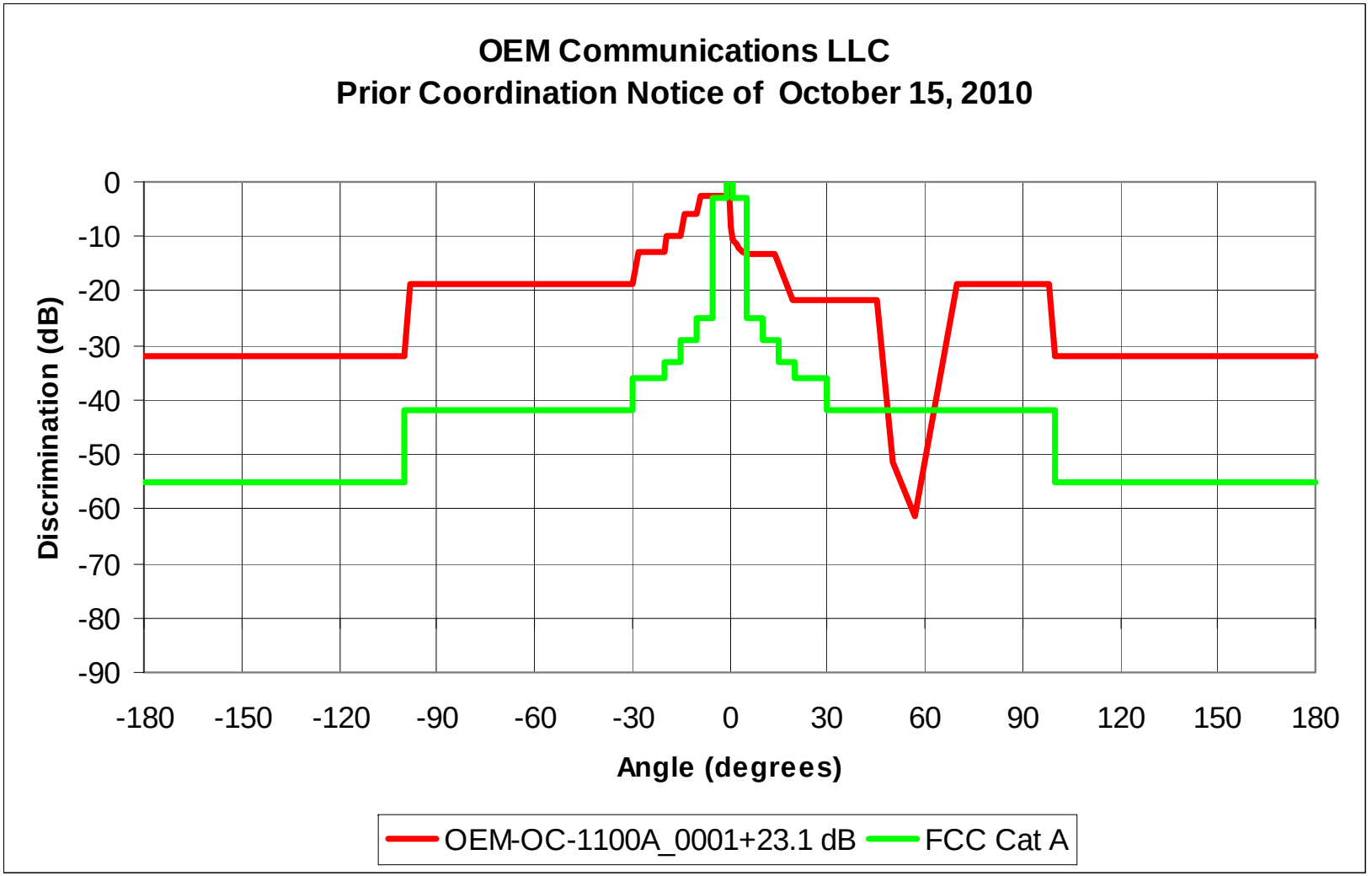
Real World Example of Auxiliary Stations Proposal: OEM Communications PCN Dated October 15, 2010

- OEM Communications LLC issued prior coordination notice (PCN) dated 10/15/10, apparently for auxiliary station primary links in 11 GHz
- PCN requests the same frequency pair both directions on two paths, apparently to support TDD operation
- PCN claims EIRP is TX Power 45.1 dBm + Ant Gain 39.6 dBi = 84.7 dBm
- Supplied pattern file shows the antenna never reaches the stated gain and there is discrimination in all directions including 23.1 dB at the main beam
- Actual EIRP is 84.7 – 23.1 = 61.6 dBm
- In the event applications are filed, affected parties will ask FCC to affirm the zero reference for the §101.115 pattern requirements is the EIRP actually transmitted by the station (e.g. 61.6 dBm)
- With this reference the antenna pattern being coordinated does not come close to meeting Category A or Category B
- Those contemplating auxiliary stations may go to great lengths to:
  - Construct twisted rule interpretations that serve their purposes
  - Maximize coverage area while crowding out other users

OEM Claims Antenna Pattern Meets FCC Category A



OEM Antenna Pattern Does Not Meet Category A (or B)



COMSEARCH
A CommScope Company

ADAPTIVE CODING AND MODULATION

Adaptive Coding and Modulation

- Adaptive Coding and Modulation ("ACM") allows a system to adjust modulation complexity in response to path conditions and fading
  - Trade off capacity versus system gain to keep the link connected
- Minimum modulation complexity 64 QAM or equivalent required to meet §101.141(a)(3) payload capacity
- System gain difference between QPSK and 64 QAM may be 13 dB or more
- For Example:

Modulation	Channel Bandwidth (MHz)	Theoretical Spectral Efficiency (bps/Hz)	Maximum Theoretical Data Rate (Mbps)	Maximum Nyquist Bandwidth (MHz)	Maximum Raw Data Rate (Mbps)	Coding Redundancy (%)	Maximum Traffic Data Rate (Mbps)	Required C/N @ 10^-6 BER (dB)	Receiver Noise Figure (dB)	Required RSL @ 10^-6 BER (dBm)	Incremental Traffic (Mbps)	Space Diversity Improvement Factor	Time Below Level (s)	Reliability (%)
4 QAM	30	2	60	24	48	6.7	45.0	10.5	3	-86.7	45.0	200.0	1.5	100.00000
8 QAM	30	3	90	24	72	6.7	67.5	14	3	-83.2	22.5	191.0	3.5	99.99999
16 QAM	30	4	120	24	96	6.7	90.0	17.6	3	-79.6	22.5	83.4	18.1	99.99994
32 QAM	30	5	150	24	120	6.7	112.5	20.6	3	-76.6	22.5	41.8	72.2	99.99977
64 QAM	30	6	180	24	144	6.7	135.0	23.8	3	-73.4	22.5	20.0	315.4	99.99900
128 QAM	30	7	210	24	168	6.7	157.5	26.7	3	-70.5	22.5	10.3	1199.0	99.99620
256 QAM	30	8	240	24	192	6.7	179.9	29.8	3	-67.4	22.5	5.0	4998.1	99.98415
512 QAM	30	9	270	24	216	6.7	202.4	32.4	3	-64.8	22.5	2.8	16550.3	99.94752

Adaptive Coding and Modulation (ACM)

- ACM changes the penalty to the user for fading greater than margin
  - Without ACM → link disconnection →outage/unavailability
  - With ACM → reduced capacity
  - Reduced capacity likely to be more acceptable than outage
- ACM may be implemented
  1. *Conservatively*: just to keep a link operating (at reduced capacity) during periods of fading when it would be unavailable with fixed modulation
  2. *Liberally*: to enable use of relaxed design objectives
     - Users may accept interference conflicts rather than use higher performance antennas that would resolve them
     - Likely to lead to use of worse antennas than would have been used with fixed modulation
  3. *Abusively*: to circumvent the payload capacity requirements

Adaptive Coding and Modulation

- We recommend that the FCC:
  1. Allow the Conservative approach immediately to keep a link operating at reduced capacity
  2. Wait to see how the Conservative approach works in practice before authorizing the Liberal approach that would enable the use of relaxed design objectives
  3. Prohibit the abuse of ACM to circumvent the payload capacity requirements
- The FCC's proposed "Anomalous Signal Fading" standard is vague, however, and may allow the lowering of a link's design standards leading to the selection of lower performance antennas and excessive time spent transmitting low payload capacity
- For these reasons, it appears necessary to set a design availability standard
- We propose 99.999% because it is a commonly used design objective and listed in TIA TSB10-F
- If the applicant (at least partly) addresses the concern over pattern performance by using Category A antennas, then a relaxation of the design objective appears reasonable, perhaps to 99.995%, subject to industry comment

RURAL EFFICIENCY STANDARDS AND OTHER RECOMMENDATIONS

Efficiency Standards in Rural Areas

- Comsearch recommends maintaining the §101.141(a)(3) payload capacity standards
- Line-of-sight may be more of a limiting factor for long paths than payload capacity requirements
- “High” sites that would allow line-of-sight for long paths may be congested despite being rural in terms of population
- Government policies and economic factors encourage licensees to co-locate microwave sites
- If payload capacity is relaxed in rural areas, definition of “rural” should account for microwave congestion as well as population density
  - Appears necessary to include a count of nearby licenses
  - Definition should not require FCC action to update over time

Other Items

Comsearch Recommends the FCC Should:

- Act on petitions for rulemaking filed by FWCC
  - RM-11605: Examine sharing of the Federal 7125-8500 MHz band by non-Federal fixed microwave systems for backhaul
  - RM-11610: Implement a prior coordination process between Federal and non-Federal users to allow conditional authorization across the entire 23 GHz band
- Fix ineffective rule language on upgrade obligations for small 11 GHz antennas (§101.115(f))
- Align rules on geostationary orbital intersections of microwave antennas with ITU Radio Regulations (§101.145(b) and (c))
- Allow smaller antennas under Category B in three specific instances (Comsearch intends to supplement our comments by filing specific suggested pattern requirements based on published RPEs)

Thank you!

Chris Hardy
Vice President
(703) 726-5641
chardy@comsearch.com

Will Perkins
Principal Engineer
(703) 726-5681
wperkins@comsearch.com

www.comsearch.com